Spring 2018

Effect of Bromination on Quorum Sensing Inhibition of Indole Carboxaldehydes

Chesley Kemp
University of North Georgia, ches2496@gmail.com

Effect of Bromination on Quorum Sensing Inhibition of Indole Carboxaldehydes

A Thesis Submitted to

the Faculty of the University of North Georgia

in Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science in Biology

with Honors

Chesley Anne Kemp

Spring 2018

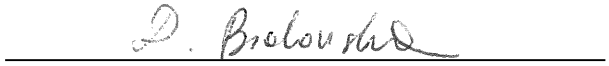
Accepted by the Honors Faculty

of the University of North Georgia

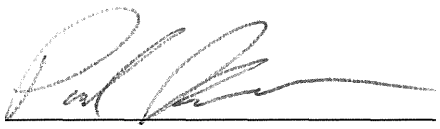
in partial fulfillment of the requirements for the title of

Honors Program Graduate

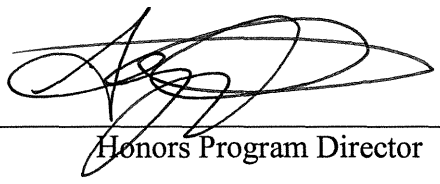
Thesis Committee:



Thesis Chair



/ ittee Mmber



Honors Program Director

Effect of Bromination on Quorum Sensing Inhibition of Indole Carboxaldehydes

Chesley-Anne Kemp
Department of Biology, University of North Georgia, Dahlonega, GA, 30597

Abstract

Quorum sensing is a form of bacterial communication that regulates group behaviors such as biofilm formation and production of virulence factors. As a result, inhibition of quorum sensing may prevent activation of pathogenesis in a number of bacterial species. Indoles are a type of signaling molecule found in many bacterial species and the indole derivative indole-3-carboxaldehyde has been found to inhibit quorum sensing mediated behaviors in *Escherichia coli*. Bromination may be a way to increase quorum sensing inhibiting properties of indole carboxaldehydes. The IC_{50}s of three monobrominated indole carboxaldehydes were determined and compared to the IC_{50} of indole-3-carboxaldehye. IC_{50}s of all three test compounds were significantly decreased from the control. There was not a significant difference between different bromination patterns, although two compounds showed a trend towards a reduced IC_{50} when compared to the third compound.